

Physical Activity and Nutrition

Background:

The U.S. has experienced a sharp increase in the rate of obesity since 1980.¹ This trend has increased risks for, many chronic diseases such as heart disease, type 2 diabetes, several types of cancers, stroke and asthma.^{1,2} The diseases and disabilities which accompany the obesity trend are costly in terms of lost quality of life and productivity. Preventable medical costs in the U.S. are estimated at \$66 billion dollars per year.²

Health Equity Highlight: Disability

People with disabilities experience disparities related to maintaining a healthy weight and meeting recommendations for physical activity and nutrition. While it is not always clear whether obesity and sedentary lifestyle leads to disability, or whether a disability makes achieving these more difficult, there are some clear correlations. Different types of disabilities can create a variety of barriers to healthy behaviors.

- In 2008, 36.3% of people who reported limitations in activities because of physical, mental, or emotional problems or a health problem that required use of special equipment were obese, while only 22.4% of those without these limitations were obese.⁷
- In 2007, 14.5% of people who reported limitations in activities because of physical, mental, or emotional problems or a health problem that required use of special equipment reported doing no physical activity or exercise, compared to 3.2% of people without these limitations.⁸

The rise in obesity is related to shifts in diet and physical activity.¹ Americans increasingly work at jobs and pursue hobbies that are sedentary in nature. Meanwhile, greater quantities of food and denser calorie foods are consumed as a larger part of the diet. These two factors work together to drive

average weights up, along with the risk of chronic disease, early death, and disability.

Starting in 1995, and continuing into 2008, Maine's adult population consistently ranked as having the highest obesity rates in New England.³ Maine's adult obesity rate in 2010 was 26.8%, making it one of 36 states with an adult obesity rate greater than 25%.⁴ Despite its status as a relatively heavy state, Maine's 2008-2010 rate of food insecurity was significantly higher than the national average in the "very low security" category.⁵ Maine currently has the highest food insecurity rates of all the New England states.

The Public Health Response

Reducing and reversing the trend towards unhealthy weight requires action at every level of a state and community.⁶ Strategies that are known to work include restructuring the food environment to make healthy choices easier, building physical activity into school and workplace schedules, and providing information about how to incorporate these initiatives into daily lifestyles. In order to be successful, communities must adopt and promote messages that support those choices and spaces that provide opportunities for active lifestyles. Programs and individuals that provide food for others can also design their menus and offerings to meet requirements for a healthy lifestyle. Awareness of areas with low access to healthy foods, called food deserts, and initiatives to reduce these also promote healthy eating. Promotion of public programs such as "Let's Go!" and "March into May" can improve rates of physical activity.

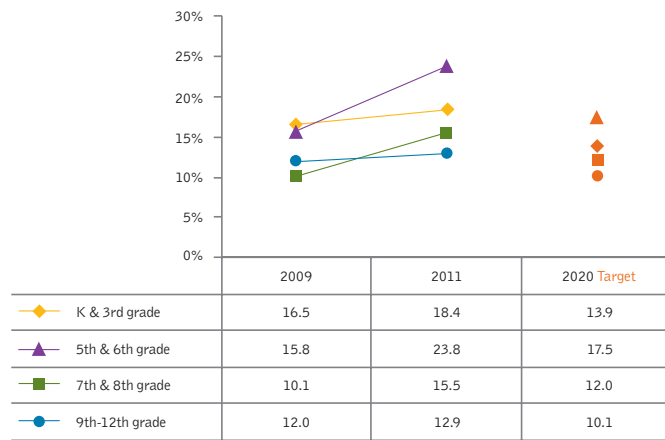
Healthy Maine 2020 Objectives:

1. Reduce the proportion of children and adolescents who are considered obese

Children and adolescents who are obese are likely to be obese as adults and are therefore more at risk for adult health problems such as heart disease, type 2 diabetes, stroke, several types of cancer, and osteoarthritis. One study showed that children who became obese as early as age 2 were more likely to be obese as adults.⁹

Only one year of Maine Integrated Youth Health Survey data is currently available. However, historical Youth Risk Behavior Survey data suggests that there has been little change in the prevalence of child and adolescent obesity over the past decade.

Proportion of children who are obese by grade, Maine, 2009, 2011



Data source: Maine Integrated Youth Health Survey

1a. Reduce the percentage of kindergarten and 3rd grade students who are obese

In 2011 approximately 18% of kindergarten and 3rd grade students were obese. The Healthy Maine 2020 goal is 13.9%.

1b. Reduce the percentage of 5th and 6th grade students who are obese

In 2011 approximately 24% of 5th and 6th grade students were obese. The Healthy Maine 2020 goal is 17.5%.

1c. Reduce the percentage of 7th and 8th grade students who are obese

In 2011 approximately 16% of 7th and 8th grade students were obese. The Healthy Maine 2020 goal is 12%.

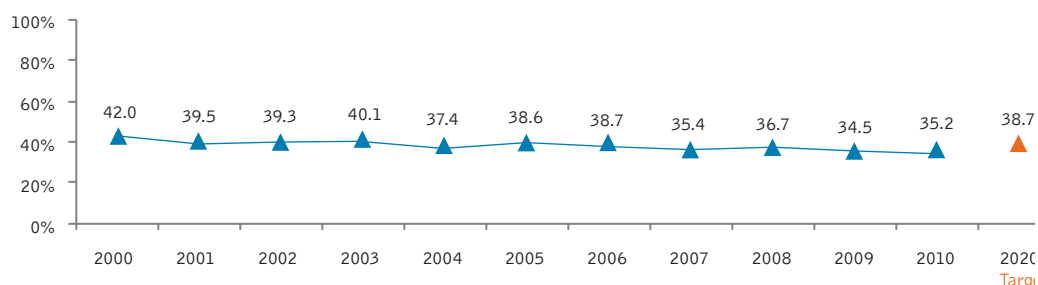
1d. Reduce the percentage of 9-12 grade students who are obese

In 2011 approximately 13% of high school students were obese. The Healthy Maine 2020 goal is 10.1%.

2. Increase the proportion of adults who are at a healthy weight

The nation is currently experiencing an epidemic of obesity and obesity-related conditions. The percentage of adults who are at a healthy weight has

Proportion of Adults at a Healthy Weight, Maine, 2000-2010



Data source: Maine BRFSS

declined over the past decade from 42% in 2000 to 35% in 2010. The Healthy Maine 2020 goal is 38.7%.

3. Increase the proportion of students who attend daily physical education (PE) at school

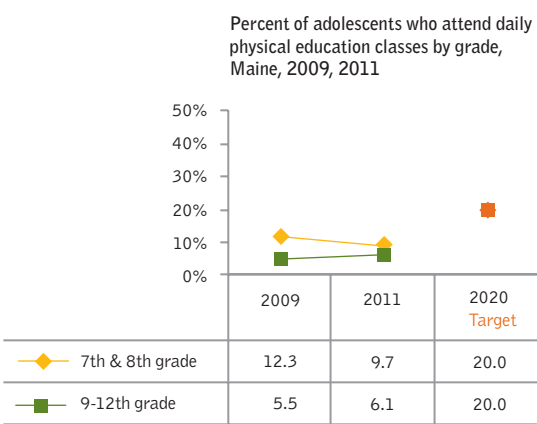
Physical activity improves health and quality of life and is one major way to prevent and control overweight and obesity. Daily physical education at school can increase physical activity among students.

3a. Increase the proportion of 7th & 8th grade students who attend daily physical education (PE) at school

In 2011 approximately 10% of 7th and 8th grade students attended daily physical education at school. The Healthy Maine 2020 goal is 20%.

3b. Increase the proportion of 9-12th grade students who attend daily physical education (PE) at school

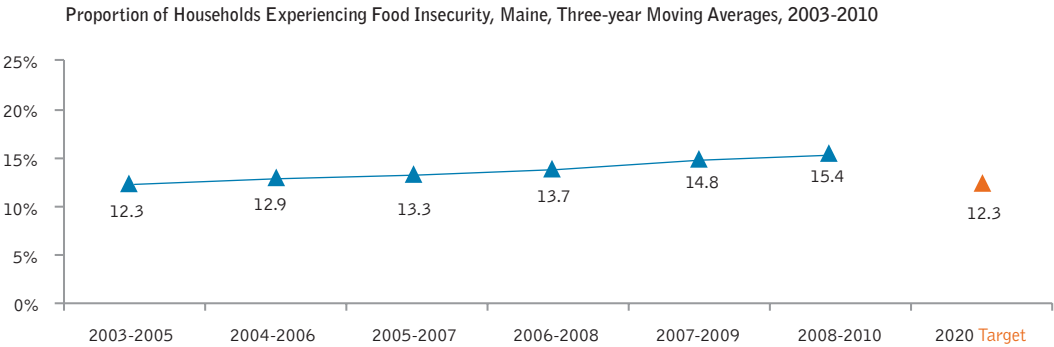
In 2011 approximately 6% of 9th-12th grade students attended daily physical education at school. Maine rates are lower that other New England states. The Healthy Maine 2020 goal of 20% is based on the average of these other states' rates.



Data source: Maine Integrated Youth Health Survey

4. Reduce the percentage of households experiencing food insecurity

Food insecurity directly impacts the ability of individuals to consume a healthy diet which promotes overall health and prevents and controls disease. The percentage of Maine households experiencing food insecurity has been increasing since 2003-2005. In 2008-2010 approximately 15% of Maine households experienced food insecurity. The Healthy Maine 2020 goal is to reduce that number to 12.3%.



Data source: USDA Annual Reports on Household Food Insecurity

5. Increase fruit and vegetable consumption among adults and children

Adequate fruit and vegetable intake can reduce the risk of developing chronic diseases, including stroke, possibly other cardiovascular diseases, and certain cancers. Increasing the contribution of total fruit vegetables to the diet of the population aged 2 and older is a Healthy People 2020 Leading Health Indicator.

5a. Increase the percentage of Kindergarten & 3rd grade students who eat five or more servings of fruits and vegetables daily

In 2011, approximately 26% of kindergarten and 3rd grade students ate 5 or more servings of fruit and vegetables daily. The Healthy Maine 2020 goal is 31.3%.

5b. Increase the percentage of 5th and 6th graders who eat five or more servings of fruits and vegetables daily

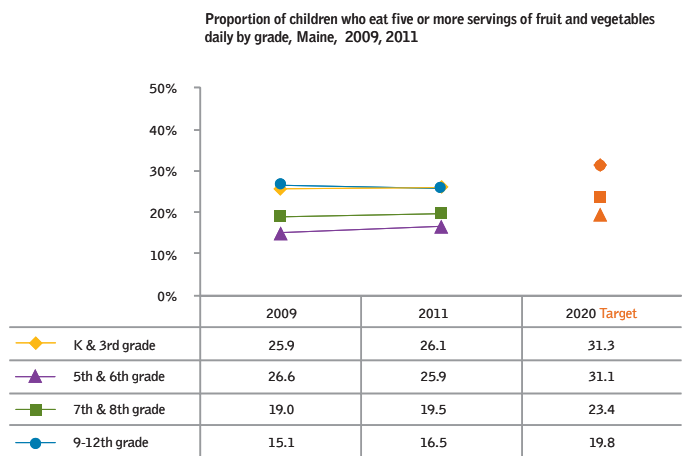
In 2011, approximately 26% of 5th and 6th grade students ate 5 or more servings of fruit and vegetables daily. The Healthy Maine 2020 goal is 31.1%.

5c. Increase the percentage of 7th & 8th grade students that eat five or more servings of fruits and vegetables daily

In 2011, approximately 20% of 7th and 8th grade students ate 5 or more servings of fruit and vegetables daily. The Healthy Maine 2020 goal is 23.4%.

5d. Increase the percentage of 9th-12th grade students that eat five or more servings of fruits and vegetables daily

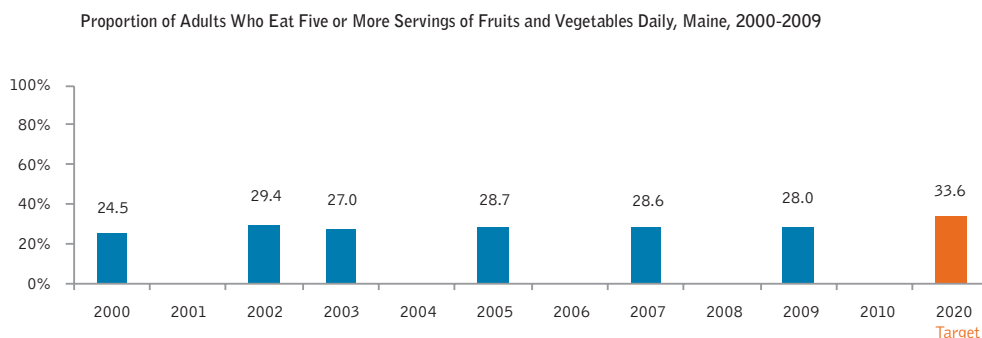
In 2011, approximately 17% of 9th-12th grade students ate 5 or more servings of fruit and vegetables daily. The Healthy Maine 2020 goal is 19.8%.



Data source: Maine Integrated Youth Health Survey

5e. Increase the percentage of adults that eat five or more servings of fruits and vegetables daily

While there was some slight improvement in adult fruit and vegetable intake between 2000 and 2002, there has been no improvement since. In 2009, approximately 28% of adults ate 5 or more fruit and vegetables daily. The Healthy Maine 2020 goal is 33.6%.



Data source: BRFSS

Methodology Notes:

1. Reduce the proportion of children and adolescents who are considered obese

SUB-OBJECTIVES:

- 1a. Reduce the percentage of kindergarten and 3rd grade students who are obese.
- 1b. Reduce the percentage of 5th and 6th grade students who are obese.
- 1c. Reduce the percentage of 7th and 8th grade students who are obese.

Measures: Percentage of students in specified grades who are obese (\geq 95th percentile of Body Mass Index (BMI) for age and sex).

Numerators: Number of students whose heights and weights (physical measures for 1a, student reports for 1b & 1c) place them in the 95th percentile or above for BMI for age and sex.

Denominators: Number of students in specified grades with a valid (non-missing) BMI.

Target setting method: The White House Task Force on Childhood Obesity in 2010 established the goal of reducing childhood obesity prevalence to that which existed in the 1960s and 1970s in a generation, or reducing the prevalence to 5% by 2030. The Healthy Maine 2020 target is set assuming one third of the reduction will occur by 2020, the remaining two-thirds reduction by 2030.

Other notes: The measure is the same as a Healthy People 2020 objective, but for grade levels, rather than for specific age groups (2-5, 6-11, and 12-19 years). The Healthy People 2020 objective also uses a different data source, National Health and Nutrition Examination Survey (NHANES), which is based on physical measures of heights and weights, but is not available at the state level. The Maine Integrated Youth Health Survey (MIYHS) kindergarten and 3rd grade BMIs are also based on physical measures of heights and weights, while the older grades are based on student report. Data

are statistically weighted to be more representative of the general student population of Maine and to adjust for non-response.

2. Increase the proportion of adults who are at a healthy weight

Measure: Percentage of adults 18+ with a Body Mass Index (BMI) ≥ 18.5 and < 25 .

Numerator: Number of individuals with a BMI ≥ 18.5 and < 25 based on respondents self-reported height and weight.

Denominator: Number of respondents with valid BMI.

Target setting method: The target is aligned with HP2020: 10% improvement from the 2010 prevalence (35.2)

Other notes: The measure of healthy weight is the same as for Healthy People 2020, but the Healthy People 2020 measure is among adults 20+ years of age, and uses National Health and Nutrition Examination Survey (NHANES) data, which is based on physical measures of height and weight, but is not available at the state level. The Healthy Maine 2020 measure is among adults 18+ years of age and is based upon self-reported height and weight. This variable is created variable from continuous BMI variable (_BMI4 and _BMI2). Data are statistically weighted to be more representative of the general adult population of Maine and to adjust for non-response.

3. Increase the proportion of students who attend daily physical education (PE) at school

SUB-OBJECTIVES:

- 3a. Increase the proportion of 7th & 8th grade students who attend PE daily (weighted).
- 3b. Increase the proportion of 9-12th grade students who attend PE daily (weighted).

Measure: Percentage of students in specified grades who report attending physical education on five or more days in an average week when they are at school.

Numerator: Number of students in specified grades who report attending physical education on five or more days in an average week when they are at school.

Denominator: Number of students in specified grades who responded to the physical education frequency question.

Target setting method: Based on current 9-12th grade rates for other New England states, which range from 17.9% - 24.0%.

Other notes: The HP2020 measure is the same, but there is no indicator for 7th & 8th grade students. The Healthy Maine 2020 uses national Youth Risk Behavior Surveillance System data as the data source. Maine Integrated Youth Health Survey (MIYHS) provides a more representative estimate for Maine than the Youth Risk Behavior Survey. Data are statistically weighted to be more representative of the general student population of Maine and to adjust for non-response.

4. Reduce the percentage of households experiencing food insecurity

Measure: Percentage of Maine households experiencing food insecurity (low or very low food security).

Numerator: Number of Maine households experiencing low or very low food security.

Denominator: Total number of Maine households.

Target Setting method: A 20% improvement over the 2008-2010 rate (15.4), which will bring Maine back to the 2003-2005 level.

Other notes: Data used is published in USDA Annual Reports on Household Food Insecurity, available

here: ers.usda.gov/Briefing/FoodSecurity/readings.htm#statistical. Percentages provided are three year averages to provide more stable rates. The measure and the data source are the same as Healthy People 2020.

5. Increase fruit and vegetable consumption among adults and children

SUB-OBJECTIVES:

5a. Increase the percentage of Kindergarten & 3rd grade students that eat five or more servings of fruits and vegetables daily.

5b. Increase the percentage of 5th & 6th grade students that eat five or more servings of fruits and vegetables daily.

5c. Increase the percentage of 7th & 8th grade students that eat five or more servings of fruits and vegetables daily.

5d. Increase the percentage of 9th -12th grade students that eat five or more servings of fruits and vegetables daily.

Measures for 5a-5d: Percentage of students in specified grades who ate fruits, 100% fruit juice, and/or vegetables five or more times per day during the past seven days

Numerator: Number of students in specified grades who said they ate fruits, 100% fruit juice and/or vegetables five or more times per day during the past seven days (parental response for K & 3rd graders).

Denominator: Number of students in specified grades with responses to fruit juice, fruit, and vegetable consumption questions.

Target setting method: A 20% improvement from the 2009 rate.

Other notes: Variable calculated using 3 questions: fruit juice, fruits and vegetables. No 5 times per day question on survey. Questions used: "During

the past 7 days how many times drank 100% fruit juice...”; “During past 7 days how many times ate fruit (not including fruit juice...”; “During past 7 days how many times ate vegetables...” The equivalent Healthy People 2020 measures are based upon mean daily intake (e.g., in cups) of both fruits and vegetables (measured separately) from dietary intake data from National Health and Nutrition Examination Survey (NHANES). Maine does not have comparable data. This is the most relevant and comparable data available. Data are statistically weighted to be more representative of the general student population of Maine and to adjust for non-response.

- 5e. Increase the percentage of adults that eat five or more servings of fruits and vegetables daily.

Measure: percentage of adults who ate fruits, 100% fruit juice, and/or vegetables five or more times per day during the past seven days.

Numerator: Number of Behavioral Risk Factor Surveillance System (BRFSS) respondents who said they ate fruits, 100% fruit juice and/or vegetables five or more times per day during the past seven days.

Denominator: Number of BRFSS respondents who answered food and vegetable consumption questions.

Target setting method: A 20% improvement from the 2009 rate

Other notes: Data are statistically weighted to be more representative of the general adult population of Maine and to adjust for non-response.

References

1. U.S. Department of Health and Human Services, *The Surgeon General’s Vision for a Healthy and Fit Nation*. 2010: Washington, D.C.
2. Wang YC, McPherson K, Marsh T, Gortmaker SL, & Brown M., *Health and Economic Burden of The Projected Obesity Trends in The USA and The UK*. The Lancet, 2011. 378(9793): p. 815-825.
3. Robert Wood Johnson Foundation, *F as in Fat: How Obesity Threatens America’s Future*. 2011.
4. Centers for Disease Control and Prevention. *U.S. Obesity Trends*. Overweight and Obesity 2011 [cited 2011 December 29]; Available from: cdc.gov/obesity/data/trends.html#State.
5. Coleman-Jensen A, Nord M, Andrews M, & Carlson S., *Household Food Security in the United States in 2010*, Economic Research Service, Editor. 2011, U.S. Department of Agriculture.
6. Healthy Maine Partnerships, *The Maine Physical Activity and Nutrition (PAN) Plan 2005-2010*. 2005, Department of Health and Human Services: Augusta, ME.
7. Maine Behavioral Risk Factor Surveillance System, 2008.
8. Maine Behavioral Risk Factor Surveillance System, 2007.
9. Centers for Disease Control and Prevention. *Childhood Obesity Facts*. Adolescent and School Health 2011 [cited 2011 December 29]; Available from: cdc.gov/healthyyouth/obesity/facts.htm.